GRUMMAN plane news

Vol. 35, No. 5, Bethpage, N.Y., March 12, 1976

Presidential meeting

At a special meeting held last month in the White House, George Skurla, Chairman of the Board and President of Grumman Aerospace, and a number of other leaders of the armed services, defense-related organizations, and members of the press were briefed by President Gerald Ford on his proposed defense budget for the next fiscal year.

While outlining the country's defensive needs with Secretary of State Henry Kissinger and Defense Secretary Donald Rumsfeld and how they tie-in to U.S. foreign affairs efforts, the President spoke out strongly for the critical need to increase defense allocations so that the United States could maintain a balance in global power and be able to negotiate "peace through strength."

In recent months there has been increasing concern expressed by government officials and military leaders of the rapidly growing Soviet naval forces and Russia's intent to expand its influence in the mid-East, Africa, Southeast Asia, and on the high seas.

At a reception in the East Room following the briefing, George Skurla chatted for a few minutes with President Ford and gave the Chief Executive his personal assurance that Grumman men and women would continue to support our country's efforts of pursuing "peace through strength" by producing the world's finest tactical aircraft for U.S. defense forces.

Bierwirth tells world of finance–see good year in'76

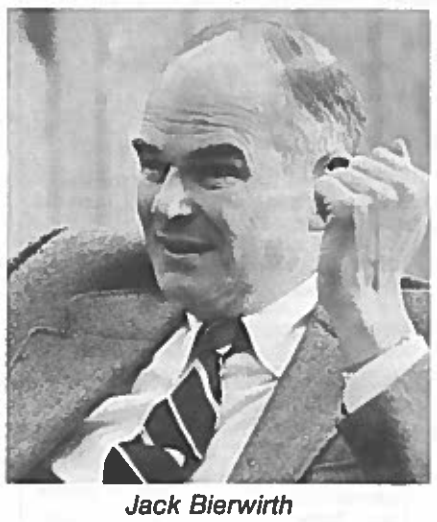
In his first public earnings projection for 1976, Jack Bierwirth, Board Chairman of Grumman Corporation, told the New York Society of Security Analysts recently that he expects corporate profits this year to compare "very nicely" with 1975 results. Grumman's 1975 operating earnings rose 18% and sales volume rose 20 % from the previous 12-month period. During the year, operating results showed progressively stronger improvements with each quarter.

The meeting of securities experts and media representatives in Manhattan was the latest in a series of such gatherings held across the country to acquaint the financial community with Grumman's financial picture. Top Grumman executives have visited St. Louis, Atlanta, Dallas and Houston in recent months to deliver public presentations to financial analysts and the press.

Bierwirth predicted before the New York group at the Bankers Club near Wall Street that 1976 would be "a good year" because some negative factors seen last year will not affect Grumman's financial picture this year. "After all, we lost money in 1975 on all of the F-14's produced for the first five months. In 1976, we won't have those first five months of losses, and the F-14 should continue on the same profitable basis that it has had in the latter half of 1975. The recession which affected some of our commercial products will be having less effect, and we expect to return to more normal levels of profitability."

Discussing the future of Grumman Aerospace's operation, Bierwirth pointed to "a good schedule of deliveries for the F-14, the E-2C and the EA-6B. ... The A-6 may well be phased out. But there is a major program which will continue, namely: the modification of old A-6's into the modernized A-6E configuration. The future of the EF-111 program is yet to be firmed up, but we are quite optimistic."

This optimism is based on a consideration of "what the trends are in the aircraft field, and where the needs will be in the future," he asserted. "Grumman has an extra element of strength in its being tilted towards the electronic side. It is also important to realize that Grumman has less vulnerability and greater opportunities for stability in the fact that it's not dependent on one or perhaps two aircraft."



Jack Bierwirth

Referring to Grumman's capability as "a company that puts good wings on superb electronics," Bierwirth discussed with the analysts such products as the E-2C,

(Continued on page 5)

Grumman teams with Ebasco to win fusion-energy contract

"Nuclear fusion, the process by which the sun and other stars generate their energy, is being developed to produce electrical power on earth. It will be safe, environmentally attractive, and its fuel—deuterium—exists in abundance in ordinary water. The deuterium in the oceans could provide enough energy to satisfy the world's electricity requirement at the present rate of consumption for millions of years... Scientists hope to build a fusion reactor by about the year 1995," says Dr. Samuel Glasstone, in a booklet circulated by the U.S. Energy Research and Development Administration (ERDA).

On February 24, Board Chairman and President George Skurla announced that Grumman Aerospace had entered the field of fusion energy by being selected as a key member of an industrial team which will design and assemble the Tokamak Fusion Test Reactor (TFTR) for ERDA (formerly the Atomic Energy Commission). The industrial team, headed by Ebasco Services Inc., which includes Grumman Aerospace, was named subcontractor to Princeton University's Plasma Physics Laboratory, who has the prime contract with ERDA.

In making the announcement, Skurla said, "We've always been proud of the high level of engineering skill and technical excellence that has been associated with Grumman products over the years. I'm pleased to see that the same expertise that produced the lunar modules which landed men on the moon and is presently making the Navy's air superiority fighter, the F-14 Tomcat, is now being directed toward peaceful uses of nuclear power."

Since 1951, when two Princeton scientists began tackling the problem of nuclear fusion control for peaceful energy, Princeton Plasma Physics Laboratory (PPPL) scientists, engineers, and technicians have been building experimental devices as they progress steadily toward fusion on a full utility scale. The TFTR device is considered to be a significant step in the transition from the theoretical and laboratory studies to the test-and-development stage of fusion power.

The TFTR device is expected to be the first in the world to provide fusion energy. But the biggest Princeton unit will still be no more than a research tool to demonstrate that thermonuclear energy can be produced; it will not attempt to produce electricity.

The Ebasco-Grumman team will work under a five-year subcontract to PPPL. The team will have its headquarters at Princeton, with supplementary activities being performed at Ebasco's New York offices and Grumman's Bethpage facilities. Bob Papsco is program manager and Eric Stern has been appointed project engineer for Grumman.

Princeton will supervise all of the activities associated with the design and construction of the TFTR device and, when it is completed, will operate the TFTR Fusion-Power Research Facility for ERDA. Construction is slated to begin this spring, with completion of the project scheduled for 1981.

Some scientists believe that nuclear fusion is the source of our future energy. Grummanites will now be able to participate in this great adventure with the PPPL scientists, engineers, and technicians to change theory into fact.

Sensitive subject

Where there's a will there's a way, but if you die without one, there is no way to determine how your estate should be distributed. Instead of having your property divided the way you intended, it may be distributed according to state law, and death taxes could be higher.

Since very few people like to talk about the need for a will, that may be why nearly half of American property owners die intestate (without a will). Unfortunately, this increases the chance of extensive legal fees for the eventual benefactors, even for a small estate.

When you draw up a will, do it with a lawyer to assure its legality. The cost isn't much, and the effort will eliminate any dispute over the division of your property.

GRUMMAN plane news

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Long journey's end. Vice President Tom Kane, deputy director of Business Development accepts F-14 No. 5 from Grumman pilot Hal Farley at Plant 4 recently after his flight from Pt. Mugu. The F-14 is being modified into a Radar Guided Weather Systems (RGWS) aircraft in the new Product Development Center. (L to R) Lt. Cdr. Mike Kearney accepted for the Navy, and Frank Paulay, Calverton engineering manager who rode in Naval Flight Officer seat on last leg, Kane, Marty Lachow who flew with Farley to Calverton. (Photo by Bob Settles)

Carrier milestone. Cdr. 'Smoke' Wilson climbs out of the Tomcat cockpit after he recorded his 1,000th carrier landing.

Marks 1,000th carrier landing

Cdr. John "Smoke" Wilson Jr. recently recorded his 1,000th arrested landing when he brought an F-14A Tomcat aboard the USS Enterprise. The landing occurred during operations off the Southern California coast.

Formerly commander of Carrier Air Wing 14 (CVW-14) and now head of air-Launch Guided Missile Branch at Naval Air Systems Command in Washington, D.C., Cdr. Wilson made his first carrier landing in April 1956 aboard the USS Saipan in an SNJ trainer. Since then, he has recorded arrested landings on 15 different aircraft carriers in 11 different aircraft, including all current Navy carrier-based aircraft.

Cdr. "Smoke" Wilson made more than 200 traps each on the USS Ticonderoga and USS Roosevelt and has logged more than 300 aboard the Enterprise.

Coincidentally, his 1,000th carrier landing was the first for the naval flight officer in the back seat of the Tomcat. Ensign Ted Carson made his first arrested landing in 1956.

Coincidentally, his 1,000th carrier landing was the first for the naval flight officer in the back seat of the Tomcat. Ensign Ted Carson of Fighter Squadron 1 (VF-1) was four years old when the commander made his first arrested landing in 1956.

See fiber-optics offering rosier view of tomorrow

When the gasoline engine came along, it pushed the horse-and-buggy off the road and put the automobile on America's highways. Now, in the aerospace field, light-carrying glass fibers may do the same thing to conventional copper wire used in communications.

An optic fiber is a filament, often smaller in diameter than a human hair, made of special glass. If you put a light at one end of the fiber, it will travel through and come out the other end. A signal can be sent by rapid bursts of light to transmit data. Informational signals, like those sent over a copper wire, can be transmitted on an optic fiber. Fiber-optics is not a power conductor and there doesn't seem to be any chance of it ever becoming so. Whenever power must be transmitted on an aircraft it will be done with wires. But perhaps this, too, will change in the future.

Fiber-optic instruments have been around for many years—doctors use flexible light-carrying probes to peer into the human body and engineers use them to see inside nuclear furnaces and other dangerous environments. But, compared to the coming wonders, these are only a first step. Fiber-optic systems, according to some predictions, will eventually make huge changes in the whole field of electronics and signal processing.

One outstanding advantage of glass-fiber cable is its light weight. In a recent Navy experiment, for example, 13 optical cables with a total length of 224 feet and a weight of 27 pounds replaced 302 copper wires with a total length of 1,890 feet and a weight of 319 pounds. The use of fiber cable reduced the weight of the system about 92 percent.

On an overall basis, the experimental installation on a test plane at the Naval Electronics Laboratory Center at San Diego showed that there was an 83 percent reduction in the number of cables and a lessening by the same percentage of cable length with the use of fiber-optics. Eighty-five percent of the cable weight was eliminated and, in addition, a savings of 75 percent in the cable costs. (There is a rule of thumb that says weight savings are worth about $1,000 per pound in life-cycle costs for high-performance aircraft.)

Fiber-optics can also be run through areas that are normally considered hazardous for electrical wiring because fiber-optic material will not spark, heat up if shorted, nor cause fires.

Fiber-optic connectors are simpler because they do not require physical contact to couple the signals and they can even allow for some off-alignment without much signal loss. Simpler connectors and fewer cables lead to simplified maintenance and do not require technicians to have as high a skill level as they need for repairing or replacing conventional cables.

An Alice-in-Wonderland feature of glass fibers is their signal-carrying capability, which is millions of times greater than metal. According to professionals in the field, a single fiber-cable could handle all the telephone traffic in the U. S. and, in one second, a super-capacity optical signal could transmit 200 books, letter by letter. Some day, glass fibers will make possible unlimited TV channels, picture-phone calling, and many other similar services. So it's easy to see why such data-transmitting capability could be very beneficial on board aircraft or spacecraft.

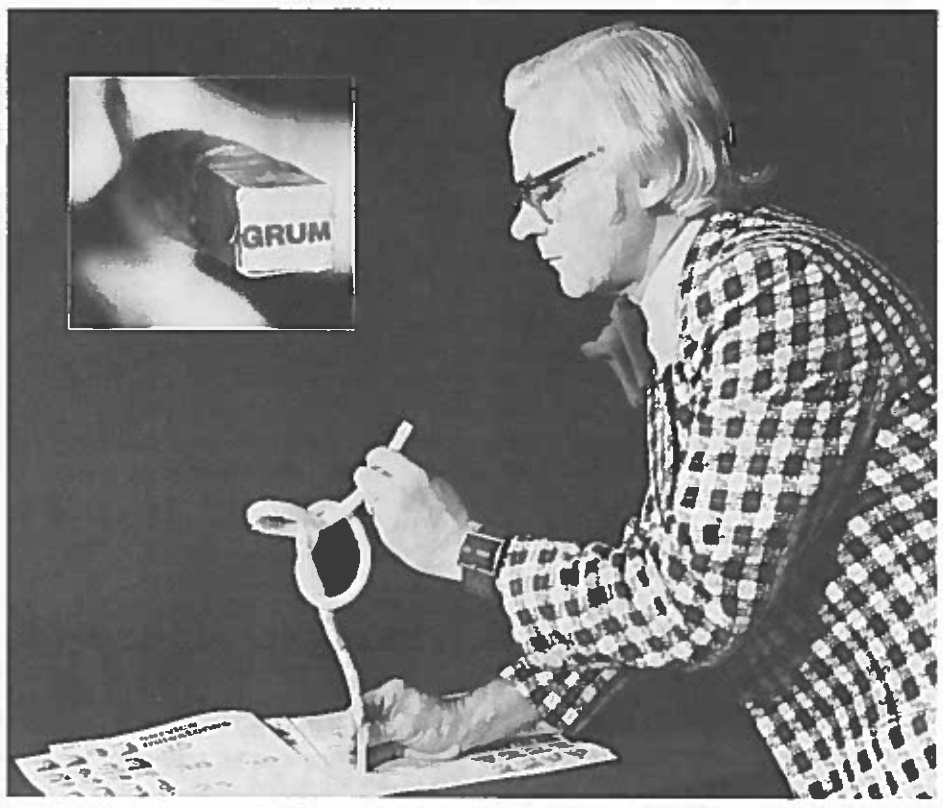
One of the many problems of an electronic system in aircraft is "crosstalk." An aircraft system may be interconnected with electrical wires which operate sensors, computers, fire control systems, etc. Each wire in the complex emits its own electrical field and that sometimes results in leakage from one set of wires to another, causing signal-coupling or crosstalk. It can happen when a pilot begins a radio voice transmission and his signal becomes coupled with an electrical signal from a computer in his craft; that causes either one or both to become distorted. It could be compared to when you are on the phone and you hear someone else's phone conversation on your connection. Fibers, unlike wires, do not emit conventional electrical fields so the problem of crosstalk is eliminated.

Although optical fibers are made from glass and are a bit thinner than human hair, they are highly flexible and have stood up to copper-wire test standards. Optical fibers have so many special properties that as John Connelly, head of Grumman's Electro-Optics Group, says, they will certainly be used in new aircraft designs. Of course, their use is not limited to flight electronics alone.

Grumman is presently marketing a program to develop a fuel gauge which uses optical fibers. When a Boeing 747 flies from New York to Los Angeles, for example, it carries an extra four-and-one-half tons of fuel so that any gauge error will be on the high side. With the Grumman fiber-optic digital gauge, such extra weight could be unneeded. The gauge can be made to measure as precisely as needed because as the tank empties, more light detectors become available to perform the measurement.

Ordinarily, gauges measure fuel by electrical capacitators that can short out and cause fire. Since the fiber gauge works on a light signal, it requires no power in the tank and provides a safe reading of fuel capacity.

Optical fiber technology can play an important role in aircraft, space vehicles, communications, and in the whole field of electronics and signal processing. Why isn't it? Some observers find the chicken-or-the-egg problem here: airframe users say they'll use the technology when it's ready; and the people with the technology say they'll push its development harder when there's enough interest in it. John Connelly thinks somebody ought to bite the bullet.



Fiber cable. Dave Ruppel of Video Engineering views part of PLANE NEWS logo through fiber-optic cable. Because the light does not leak from one fiber to another (there are 30,000 fibers) the cable transmits an intact image, a quality that also allows transmission of informational signals. (Photos by Richard Breunig)

List Sunstream dealers

The Grumman Sunstream Model 50A, a solar hot-water heater for homes is now being marketed on Long Island. The Sunstream comes in kit form ready for assembly and installation by the homeowner or by a plumbing contractor. The kit, which has a suggested retail price of $995, contains: two flat-plate solar collectors, each measuring 3-feet, 4-inches x 9-feet, 2-inches, weighing about 70 pounds each; an 80-gallon, glass-lined, steel water-storage tank with integral wrap-around heat exchanger; a circulating pump; an expansion tank; pump control; Sunstream anti-freeze; and some special fittings for use in installation.

The following dealers are offering this new solar hot-water heater to homeowners:

Patterson Solar Systems, Floral Park;

Glen Head Electric — R & A Burtis, Glen Head;

Greco Bros. Fuel Corp., Bethpage;

Saw Mill Plumbing and Heating, Yonkers;

Southampton Fuel Company, Inc., Southampton;

Barrett Heating and Air Conditioning Co., Bay Shore;

Colins Consultants Int'l, Ltd., New Rochelle;

Volkmann Heating Corp., Patchogue.

Three dealers outside the metropolitan area are also offering the Sunstream: Enertech Corp., Norwich, Vt.; Solar Heat of Pennsylvania, Lancaster, Pa.; and Chilton Engineering, Elko, Nevada.

Wanted: umpires

Umpires are needed for the North Shore Little League (Rocky Point, Miller Place, Mt. Sinai). According to Grummanite Dick Nemec, umpires are needed for either part-time or for regular season play. Contact Nemec on 928-2030 if you are interested.

Information please

If you've been having trouble calling the Corporate Library and Technical Information Center, there is a definite reason why. The telephone numbers have been changed. The extension numbers now are 3912 and 3913. Extensions 84215 and 84216 remain unchanged though.

people

Fred Trinkle, who is on the staff of the Electronic Equipment Technology Department in Plant 35, has been unable to use his legs since birth and uses braces and crutches to walk. His handicap has given him the incentive to spend his leisure time trying to improve orthopedic devices and appliances—with outstanding success.

The burly engineer, who has been with Grumman for 17 years, has built two hand-control devices for cars, one of which is manufactured by a California-based company. The prototype was constructed by Trinkle with some old parts acquired from Grumman and used in his car until the manufacturer gave him the first production-line model of his device in 1962.

Trinkle, who wears metal braces on both legs, not only has rebuilt his own set, but in the early '60's designed and built a new ankle joint, with Grumman's help, that has yet to fail. The normal life of a set, says Fred, is eight years, but his rebuilt pair of braces has lasted since 1949.

Fred has constructed miniaturized versions of an electroshock machine (to electrically anesthetize nerves) and a metronome-like audio device for stutterers. He has also provided doctors at the Mayo Clinic in Minnesota samples of other handicap aids for study.

Although he could have possibly capitalized financially on his ideas, Fred Trinkle chose not to. He explains it this way: "Grumman never looks at me as a handicapped person, and I figure if they can help me, why should I try to gain from my own ideas? I just like to feel that by giving my own ideas, I did contribute to the advancement of medical science."

Perfect record

Many people have been working for Grumman for 25 years or more, and that's quite an accomplishment. Steve Malesky of the Press Department in Plant 2 is going on 27 years at Grumman and has a perfect attendance record—and that's amazing. Actually, Steve started in 1941, before WW II, but by the time the Normandy invasion came around he was working for the U.S. Goverment at Omaha Beach. He remained a G.I. till the end of the war and came back to Grumman in 1950, bringing along a few pieces of shrapnel in his right arm.

Mitt thanks. Steve Malesky (L) is congratulated by Plant 2 manager John Schneider for a perfect work-attendance record of over 26 years.

Since then, Malesky has been working as a machine operator without missing a day, except for weekends, holidays, and vacations. Ask Steve if he likes Grumman and his enthusiastic reply is, "My heart's right with this company. When I'm here I'm all Grumman. Of course, when I go home it's time to relax."

Steve's the first one to admit he didn't establish his record alone. "My wife and I work as a team; if it weren't for her, sometimes I don't think I would make it." Malesky and his wife, Helen, have lived in their Hicksville home for 26 years. He installed a six-hole putting green around his house to practice his golfing technique, and spends other leisure time either fishing or raising flowers.

For Steve, coming to work each morning is as natural as getting up. "Everybody's working for money; we all have families," explains Steve. "If everybody decided to take off, where would this company be?" And Malesky plans to keep working for a while more, too. "I went to Strang two weeks ago and my bill of health was perfect." Steve thinks he will retire in a few more years. "I figure after 30 years I'm over the hump." Judging by the way he acts and feels and looks, he could mean 30 more years.

Proud pops ...

Jean Arnold, whose dad Jack works at Stuart, was rated "superior" for her participation in a clarinet trio and quartet during a local district competition in Florida. ... The Sunday News reported that Bob Cruz, a newcomer to New York radio, is taking over as WABC's all-night DJ. Young Cruz is the son of Bob Cruz, a former high-school wrestling champ on the Island, who is a lead inspector in Quality Control, Plant 1. ... At an all-sports tourney for American Schools at Isfahan, Tehran, Bahrein, and Cairo, Melissa Marshall (Don's her father) was chosen to the all-star girls' basketball squad. Others from the Grumman contingent at Isfahan who were honored were Jim Morales (Joe's his dad), who earned a second in 126-pound wrestling class, and Gary Aguinaga (Lou's his father), who finished third in the 132-pound class.

Honor Trapnell ...

The late Vice Adm. Frederick Trapnell, an early test pilot and second commander of the Naval Air Test Center at Patuxent River was honored recently when the Navy announced plans to name the airfield at Patuxent River "Trapnell Field." Formal ceremonies will take place on April 1. A memorial to the admiral, who died in January 1975, will be erected near the Air Operations building at the site of the ceremony. ... At Plant 66 in Milledgeville, Georgia, friends are congratulating Bobby Warren on his appointment recently to the Board of Family and Children Services for Hancock County. He was named to the post by T.M. Parham, commissioner for HEW for the State of Georgia.

Change in assignments

In recent changes in assignments J.J. Bussolini is appointed director of Department Management Operations, responsible for directing appropriate centralized department activities; and Charles E. Lane is appointed director for the newly established Audit Liaison Department; and in DEPARTMENTAL OPERATIONS — Joseph A. Maresca, engineering manager, Nacelles and Thrust Reversers in the Product Engineering Department; and Samuel Rogers who is responsible for technical liaison between Grumman and the Naval Air Development Center; PROGRAM MANAGEMENT — Thomas A. Guarino, in addition to his present duties, is assigned the responsibility of coordinating all activities relating to international sales.

Sterling savers. Phil Vassallo, director of Corporate Procurement Operations, presents a 'Project Sterling Group Award' plaque to Supervisor Jack Otto and the staff of F-14 Machine Parts Purchasing in plant 30. The group earned the award by achieving a cost savings of $396,835 by placing spare requirements with production orders.

Bierwirth views '76: looks like good year

(Continued from page 1)

"the only operative early warning radar airplane, that carries with it its own computerized control center" and he called the EA-6B "the only operative electronic countermeasures aircraft."

During the question and answer session with the analysts. Bierwirth termed the EF-111 contract with the U.S. Air Force "extremely important to us because it has continued, quite frankly, our dominance in the airborne electronic countermeasures field."

Bierwirth referred other questions on the EF-111 program to Mike Pelehach, Senior Vice President of Grumman Aerospace, who characterized the Air Force contract as "an adaption of the EA-6B mission to the Air Force." Pelehach estimated that the program might eventually involve a half billion dollars worth of Air Force business "through the 1980 time period."

As far as all aerospace programs are concerned, Bierwirth said "their longevity and profitability" will be affected by sales outside of the United States.

Substantial interest

Referring to sales abroad, Bierwirth said: "We now have a major order from the Government of Iran for 80 F-14's. We are about to receive final documents in the important Israeli E-2C program. A substantial number of countries are considering both of these aircraft. Since the conversations tend to be government-to-government, and since the sales contracts all now seem to be government-to-government, it is very hard for us to estimate probabilities, but we do detect a substantial level of interest."

Commenting briefly on Grumman's "problem regarding our arrangements with Iran" over the highly publicized sales-agent commission dispute, Bierwirth said: "A responsible solution is imperative to the relationships of the two countries and to Grumman future relationship with Iran." But he indicated that any settlement currently under consideration would not cause appreciable changes in Grumman's financial outlook.

In the commercial or non-defense areas of Grumman's business, Bierwirth was optimistic about the company's general aviation outlook. Referring to Grumman American Aviation, he said, "In general aviation, the Gulfstream II continues to be the supreme executive jet. Its pattern of sales has been gradually evolving to the point where instead of always going to the international corporation, it is now, more and more, being purchased by foreign governments for ministerial or presidential use."

Move should help

AG-Cat business has been improving but the single-engine general aircraft business has not been profitable and will not be until Grumman American production is moved from Cleveland, Ohio, to the larger facilities in Savannah, Georgia. "When we begin production in Savannah at the end of the second quarter this year," he explained, "we will have enhanced capability and, hopefully, be prepared to launch ourselves towards profitability and a greater participation in general aviation."

Though Grumman's position as a manufacturer of special truck bodies is "excellent," Grumman Allied Industries still experienced difficulties in 1975. A fading recession prompts optimism toward a much better 1976. Ambulances, buses, and fire-fighting vehicles were mentioned as products in that category.

Also at Grumman Allied, the Pearson yacht business was characterized as good last year and the backlog of orders should make this year the best in the company's history. Although the canoe business was affected by the recession, the outlook began to improve by the close of 1975.

As far as data processing is concerned, Bierwirth said Grumman was "succeeding rather well," but he conceded that "not everything the company tried was a success" in this area. He disclosed that the company had taken a $2.5 million write-off because Grumman Data Systems discontinued its MASS-TAPE operation. "We believe that in 1976 we will have more respectable earnings in this area because we have no further write-offs to make and because the base of our business has been picking up rather nicely since last September."

Variety

Progress is also expected during the next few years in a variety of other areas including solar energy, water purification, waste-disposal systems, and energy-conservation programs. Bierwirth also said the Dormavac container being developed by Grumman Allied for storing perishable goods could be "an important general item," but he cautioned that "we will only begin to get a proper evaluation when the results come back this fall."

Forerunners. One of the first departments to hit the 100% mark in the GAA drive was Transportation in Plant 20. That's quite a feat! The members led by Harry Milne (front row L) spend most of the day on the road keeping Grumman on the move. (Photo by Rich Breuning)

GAA membership only $1— still a bargain after 29 years

Not even the five-and-dime stores can boast that they've been able to stretch the buck as far as the Grumman Athletic Association has been able to do—and for 29 years!

The annual GAA membership drive was launched on Monday, March 1. For only one dollar, you can join thousands of other Grummanites who, over the years, have supported GAA. If you haven't purchased your 1976 GAA ticket, you have only 13 more working days to join the crowd.

Change-of-pace

One of the first people to purchase a 1976 membership card—and one of the most enthusiastic about the annual drive—is Board Chairman and President George Skurla. In a message to all Grumman managers and supervisors, he stated "Starting March 1, the Grumman Athletic Association will be conducting a month-long membership drive for funds to sponsor its wide offering of recreational activities. As you know, GAA has been an important part of Grumman for many years and has done much to provide our employees a welcome change-of-pace during their lunchtime and leisure hours.

"Membership tickets are only $1 apiece and those people who buy GAA tickets are also eligible for a number of prizes at the conclusion of the campaign. I encourage you to personally support GAA and to encourage all those in your department to buy GAA tickets so that we can reach 100% in the drive."

Tickets are available from your supervisor. Mike Cherry, who's conducting this year's drive, reminds all those who pass the buck to GAA to make sure to return the attached stub so that your name can be included in the drawing for fifteen $100 U.S. Savings Bonds and 50 sets of Grumman glasses.

Be a big sport and give a "George Washington." Join the growing list of 100 percent GAA membership departments.

Plant 2 — Waste Disposal.

Plant 3 — Waste Disposal.

Plant 6 — Waste Disposal.

Plant 5 — Operations Mgmt./Staff; Resource Control Mgmt./Staff; Plane News.

Plant 16 — Template

Plant 20 — Transportation Office; Transportation Ops.; Transportation Equipment-Maintenance.

Plant 28 — Security & Personnel Services Mgmt.; Corporate Security; Opportunity Development; Employment/Placement; Personnel Admin.; Field Base Administration; Insurance/Records/Benefits.

Plant 30 — Property Mgmt.; GAA; Prog. Procurement Mgmt/Staff; Procurement Mgmt./Staff; Facilities Engg. Secretaries; Facil. Business Office; Facil. Engg. Admin.; Facil. Maint. Admin.

Plant 36 — Center/Section./Final; Final Assembly.

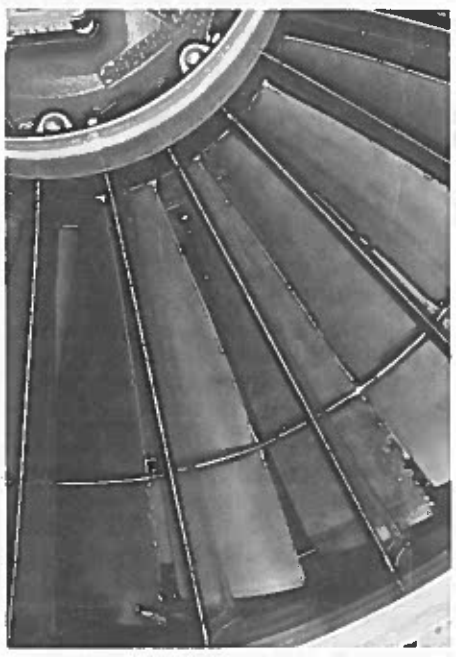
HQ — Corporate Development; Paumanock Leasing; Corporate Quality & Safety; Legal; Corporate Insurance; Treasurer's Office; Corporate Admin.

Buying and selling

The first meeting for members of the Grumman Employee Investment Plan is scheduled for Thursday, April 1, at Bethpage, starting about 5:15 p.m. Retirees as well as active Grummanites are invited to attend. Further information will be contained in the March 26 issue of *Plane News.*

Debris more than unsightly, it can be dangerous, too

Last year, a huge DC-10 commercial jet nearly crashed on takeoff from New York's JFK Airport after passing through a flock of seagulls. A few of the birds, a common sight at coastal airports, were sucked into one of the DC-10's giant jet engines causing the disintegration of sensitive turbine blades and engine explosion and fire. The takeoff was aborted, the aircraft almost totally destroyed by fire and over a hundred passengers narrowly escaped serious injury. Other jet-engine aircraft and passengers have not been as fortunate.



An example of damage to turbine blades caused by fragments ingested by engine.

While seagulls are not the type of foreign objects that concern the Grumman Foreign Object Debris/Damage (FOD) Prevention Program they dramatically show the effect harmless objects can have on jet aircraft. Jet engines while powerful, reliable and seemingly invulnerable are extremely prone to damage by foreign objects. Other parts of the aircraft are also subject to damage by foreign objects or debris—smooth-running engines explode, control systems jam and electrical circuits short-out.

Grumman FOD control efforts since the end of '74 have been coordinated under George Wiesinger of Operations Quality who was named the director of the Corporate FOD Prevention Program, which is designed to complement the Manufacturing Department's Good Housekeeping Program. In defining the basic Grumman goal, Wiesinger says: "The FOD, we're especially concerned about preventing in this program is the debris that accumulates while a plane is on the production line or the kind that is left inside after it reaches the flight line."

Debris left in any aircraft during assembly can cause damage to engines and critical systems and could effect safety of flight. Most debris of this type is the result of personal carelessness. For example, a small nut dropped un-noticed from a worker's shirt pocket or tool kit could lodge under a control mechanism, become wedged during flight maneuvers, render the control system inoperable, and prevent safe normal landing operations. This is the type of foreign object debris that the Grumman FOD Program is designed to prevent. Seagulls, ice, hail and animals are of critical concern but are usually beyond man's control.

Wiesinger notes three main sources

- **Built-in FOD:** assembly hardware that is dropped during construction and overlooked.
- **Designed-in FOD:** using Huck rivets (on structural assemblies) in critical aircraft areas. Drilled-out rivets and rivet tails, as well as the stems are part of the production process. This situation could be resolved by development of design engineering changes that would prevent migration of such debris to critical sections of the aircraft and/or by providing a production method to catch Huck assembly debris.
- **Personnel-induced FOD:** tools, assembly aids, and personal effects that are left in or around the aircraft that could cause damage.

Often, says Wiesinger, there is no evidence of the real causes in FOD incidents, but the Grumman program investigates all possibilities and initiates corrective procedures where needed. This program must be accomplished on two fronts: management, which sets the goals and requirements and provides the tools and methods for implementation; and production, where FOD directives are implemented.

Continued surveillance on the production and flight lines and detailed reminders of FOD requirements are now standard procedure throughout Grumman facilities. FOD prevention hinges on the awareness of technicians and mechanics, the last line of defense in catching potential trouble-makers hiding in airplane recesses. A number of special tools, ranging from a 79-cent plastic tool tote to a $4,000 flexible fiber-optic borescope, have been employed in controlling and locating foreign object debris. Not all such aids have proved to be cost savers. For example, X-raying the aircraft for foreign objects was tried and discounted because it was not only too costly but impractical as well.

But the search goes on in many ways. FOD squads made up of production workers have been formed in each plant to examine aircraft as they progress from station to station and through departments. Where possible, F-14 workers thoroughly go over A-6 construction and A-6 personnel review F-14 buildup. Teams are rotated weekly for a maximum personnel exposure to prevention procedures. Debris detected during daily reviews is photographed and displayed on FOD bulletin boards in the most heavily-used plant areas as part of the awareness campaign. Most important, debris is collected and delivered to the plant production manager so that he can take the corrective action necessary to prevent a recurrence.

Plant recogition

Weekly audits are made by each plant's FOD committee. Plant 6 has been using these review and audit reports for almost a year to determine winners for "clean station" and "clean department" awards. Any station, department, or hangar that wins the monthly Project Sterling plaque three times in six months can achieve another more coveted Project Sterling plaque. An individual award—the FOD Attatboy Coupon—is also presented for "exhibiting exceptional FOD prevention techniques and attitudes," says Wiesinger, and it is redeemable for refreshments at Grumman cafeterias or buffeterias.

Other methods used in FOD prevention include the notification of feeder-plant managers of debris found in aircraft after movement from their areas to a final assembly area. Movies, posters, and a FOD mobile display help to round out the total awareness program.

Long way

Wiesinger and his associates are not ready to accept congratulations for a totally implemented FOD Program. "The FOD program has been only partially successful," he says. "We've come a long way since the end of '74 and the progress we've made couldn't have been achieved without the cooperation of the plant and production managers. But we are not at a point where we can be satisfied. Debris is still being found —at a much reduced rate, certainly, but it is not yet eliminated."

Nevertheless, the Naval Air Systems Command reviews conducted in April last year found the Grumman FOD Prevention Program to be excellent. It may be impossible to eliminate FOD completely, but it's apparent that a number of people at Grumman are trying very hard to make it a scarcity.

Top detectives. The plaque for Clean Station Award is presented to Plant 6, F-14 Station 1, winners three times in a row for detecting Foreign Object Debris (FOD) in aircraft assemblies. (Standing L to R) Al Schaeffer, Dave Daviduk, Ray Weick, Dave Murray, Ed Campbell, Don Welcome, Tom Butler, George Wiesinger, Bill Swamback, John Gazzola, John Peterson, and Frank Neri. (Front) Bob Burns, George Rottner, Paul Davis, George Stapleton, and Antone Wysocky.

Cream of the crop. In the men's varsity rolloffs, Fred Dick and Ernie Jenkins (R) tied for first-place residency by rolling 5,150 in the 27-game varsity trials. (Photo by Rich Breunig)

Dick, Jenkins share top berth on 1976 men's varsity squad

When the last pin fell in the men's varsity rolloffs, the 1976 Grumman varsity men's team had two keglers tied for the number one slot: Fred Dick and Ernie Jenkins.

While Jenkins has been a member of the squad for the past five years, this marks the first time that Dick has survived the last cut. "I've been trying out the past five or six years," says the 11-year Grummanite, "but this year I knew I'd make the grade —but not necessarily tie for first." Dick attributes this year's performance to a new bowling ball and the strong average he's attained in both the Grumman Masters and the Gold Mixed leagues. "It normally takes a kegler with a 185 average to make the team. At this year's trials I sported a 185, and as long as I was consistent, I felt I'd make the top 10 keglers."

Jenkins, as co-leader of the Grumman five entered in the 35th L.I. Industrial Men's Bowling Tournament, is quick to point out the solid team that the company will field this season. "Judge Locke has represented Grumman in the night-shift tournaments," says the 24-year Grumman veteran. "And, we also have good support from Mike Greggo and Joe Glasser in the starting line-up." Adds Dick: "Judging from the last night of the rolloffs, Grumman is a strong contender for the Jake Swirbul trophy this year."

In the last three games, Mike Greggo rolled a 279 for a 620 series. Final standings were Jenkins and Dick with 5,150 (averaging 191 for the 27-game series); Joe Glasser (5,145); Judge Locke (5,122); Mike Greggo (5,072); Charles Smith (5,071); Barry Kasin (5,064); Grover Hart (5,043); Tom O'Connor (5,014); and Frank Fiorentino (4,972).

Starting last Saturday night on the Mid Isle Lanes in Hempstead, the Grumman men's varsity tested their prowess on the lanes against 16 other industrial teams. The annual L.I. Industrial Bowling Tournament, sponsored by Grumman, will continue on the next three Saturdays, March 13-20-27, starting at 8 p.m.

Gerdon–welcome addition to women's bowling team

Evelyn Gerdon may be a newcomer to Grumman but she's brought years of experience to the Grumman women's varsity bowling team. An avid kegler for over 20 years, Gerdon has participated in several L.I. tourneys. This is the second year that she's been a Grummanite and through friends' prodding decided to try for a spot on the women's squad. Averaging 164 in regular league play, she led the women's rolloffs by spilling the pins for 1,440 in the eight-game series, a 180 average.

Gerdon isn't the only experienced kegler on the women's squad. Chin Thompson has been representing Grumman in the industrial tourney for the past 24 years. She chopped wood for 1,388 pins in the 8-game series. Bella Cherry, after passing over the varsity trials for the past five years, decided to once again vie for a varsity berth. A varsity member for several years in the 60s, she made the final cut by rolling 1,352.

Rounding out the varsity squad is Bertha Siegl, another Grumman veteran kegler. Others making the team are: Arlene Schwemmer, Gladys Smith, Peg Sheridan, and Joan Bodensky.

The top four women bowlers will

Evelyn Gerdon

compete in the Pan Am Mixed tourney on April 3, and in the annual Industrial Women's tourney sponsored by Republic on April 10-17.

Records have short lives in GAA kegler leagues

On March 1, they had to rewrite the Masters' log book. Ed Gabriel showed no mercy for the pins as he rolled 210-212-225-258 for a new high four game series of 905. And, on the same evening, the old mark of 258 held by Sid Kaufmann and Joe Gentile was obliterated by Dick Spalding, who punished the pins for 266. Ike Washington set his own pace. For 40 consecutive frames, he fired a spare or a strike. His assault resulted in 213-192-215-222-832.

The Great River Green's alleys have been burning up and Bob Dudonis is the man lighting the fuse. He chopped wood for 277-213-212-702. His performance erased previous records in both high game and high series. Other league highlights were: Karl Stahl, 205-227-222-654; Ron Sinniger, 212-211-223; John Gramlich, 214-244-626; Bill Masone, 262-615.

Skip Day of the Calverton Nite Owl league rolled a commendable 232—98 pins above his average. And, in the Monday Nite Mixed league, Fran Ruggiero and Pat Schelp share top women's game honors with 213; Bob Springer is top bowler for men with 256.

In the Calverton Goose league, Joe Moore recently spilled the pins for 242-209-209-660. His name now is placed next to Len Trifaro's in the high individual series charts, but Moore's 242 effort was four pins short of moving into a three-way tie with Ed Brandt and Ray McCormick for high game.

It's a hit-and-miss game for Grumman pistol teams

In the International Industrial league, there is no squabbling over the fact that the Grumman ISU pistol shooters are winners. With Ed Kovacs leading the way with 271, they kept their unblemished record at 7-0 by defeating Center Island R&P Club, 1,040-922. Rounding out the firepower were Ron Trenkner (268), Chuck Packert (253), and Mort Weinberg (248). In their latest bout, Grumman ISU beat Sperry ISU, 1,078-987. Once again Kovacs led the assault, this time firing 275. Tom Lovatt, Phil Boehm, and Mike Baumgartner fired 271, 268, and 264, respectively.

Three Grumman Gold sharpshooters scored in the 270s during a victory over the Pan Am team, recently: Boehm (275), Trenkner (271), and Kovacs (270). The Gold team racked up win number six while trouncing Sperry Gyroscope, 1,085-923. Kovacs was top shooter with 279; Nick Evanglides fired 274. The pistol squad has dropped only one match thus far this season in the sharpshooter division.

Their fellow Grummanites on the "D" team have lost two matches out of six. Victory eluded them in the Pan Am shoot-out, 1,027-1,085, with Dave Rice leading the Ds by firing 282. The "Ds" fared much better against the Grumman "Cs" though, winning 1,049-1,007, as Al Berka shot 268. The "Cs" sport a record of 2-4.

In the Marksman division, the Grumman "B" pistol team is barely keeping its head above water with a 3-2 record. Led by Joe Parissi (251), the "Bs" lost to Republic, 972-988. In the same division, the "Es" are still struggling for their second win of the season. With Art Granata contributing 254, the "Es" lost their eighth match to IBM, 917-890.

Invite booters

The Grumman varsity soccer team is readying for the spring season. Any able bodied men interested in playing in the L.I. Soccer league should contact Scotty Mayors, Ext. 84444.

Visiting Israeli. Vardi Leor, deputy head of Aircraft Assembly Directorate, Aircraft Manufacturing Division of Israel Aircraft Industries Ltd., visited Bethpage recently to study Grumman Aerospace manufacturing operations. While here he toured Plant 2, Plant 1, and Plant 3 assembly areas. He is pictured (2nd L) during discussion on production and cost performance with Bill Going, Jerry Barfus, and Chris Hansen. (Photo by Marie Trimborn)

Garden Forum unveils '76 exhibit schedule

The Grumman Garden Forum announced its 1976 schedule of events last week and the Spring Flower Show, slated for Wednesday, May 5, will lead off the floral exhibits. The following is a listing of the show dates with show managers:

Spring Flower Show, Marie Catalano, Manager (Ext. 84030), and Kay Trestka, assistant manager, (Ext. 7250). (Retiree aides, Karl Hagen and Otto Schineis).

Rose Show, Wednesday, June 16, Gus Preiser, manager (Ext. 2886); Ray Goddard (Ext. 7914) and Dick Brummer (Ext. 2171) are assistant managers.

Fall Show, Wednesday, September 15, John Steffens, manager (Ext. 84349); Jane Gerrity (Ext. 3744) and Frank Vernon (Ext. 2656) are assistant managers.

In '76 there will be a new class: hanging baskets and house plants. More information will be contained in an upcoming issue of *Plane News* on the Spring show.

obituaries

LOUIS M. YANELLI of Mech. Struct. and Proto., Pl. 5, died February 20 at the age of 48. He had been with Grumman since 1949 and lived at 20 Columbia Street, Bethpage.

CHARLES R. CONNERS, Guid. and Control System Inte., Pl. 1, died February 23 at the age of 53. He had been with the company since 1949 and lived at 36 Pinecone Lane, Westbury.

Guest speaker. Lt. Gen George Rhodes, Vice Commander, Air Force Logistics Command, Wright Patterson AFB, is greeted at Bethpage by (L to R) Capt. Richard Wilson, Naval Plant Representative at Bethpage, George Thompson of Customer Requirements, and Senior Vice President Ross Mickey. Later General Rhodes spoke before the Long Island Society of Logistics Engineers on 'Logistics in the Air Force Today'. Prior to his talk, he toured Grumman facilities. (Photo by Fred Annette)

calendar

American Production & Inventory Control Society: Tues., Mar. 16, dinner 6 p.m., speaker 8 p.m., Maine Maid Inn, Jericho, Rte. 106 & Jericho Tpke.; local chapter; guest speaker: Richard Moore, Arthur Anderson & Co.—"Anatomy of a Manufacturing Planning & Control System;" guests welcome. Norm Heilweil, x2250.

American Society for Metals: Wed., Mar. 17, cocktails 5:30-6:30 p.m., dinner 6:30-8:00 p.m., speaker 8 p.m., Kings Grant Motor Inn; L.I. Chapter; guest speaker: Edgar Gotthold, Tec-Cost, Inc.—"Investment Costing Capabilities;" guests welcome. Jerry Beaudain, x3945.

American Society of Mechanical Engineers: Wed., Mar. 17, tour of simulator 5 p.m., cocktails 6 p.m., dinner 7 p.m., speaker 8 p.m., U.S. Merchant Marine Academy, Kings Point; L.I. Section; guest speaker: Dr. Justus Riek, GDS—"Computer Simulation of Waterway Navigation;" guests welcome. Larry Hahn, x1916.

GACE Flying Club: Fri., Mar. 12, 5 p.m., Pl. 28 auditorium; reg. mtg. & lecture on "Survival After Forced Landings;" guest speakers: Mr. Robert Burtis, GACE Training Director & Mr. Thomas Hine, GACE Flight Instructor. Larry Hahn, x1916.

Grumman Toastmasters Club: Wed., Mar. 24/April 7, 5 p.m., Pl. 25, conf. rm. 1C; local chapter; reg. mtg.; guests welcome. Tom Smith, x87360.

Long Island Association of Industrial Nurses: Fri., Mar. 19, 7 p.m., Huntington Town House; local chapter; fashion show & dinner; guests welcome. Medical Dept., x3020.

Retiree Club: Wed., Mar. 31, 1:30 p.m., Holiday Manor; Florida Suncoast: Tues., Mar. 30, 11:30 a.m., S&S Cafeteria, Sears Town, 1235 So. Missouri Ave., Clearwater; Florida East Coast: Thurs., Mar. 25, 12:30 p.m., Trade Winds Cafeteria, Sears Town, U.S. Rte. 1, Fort Pierce; Florida West Coast: Tues., Mar. 16, 11:30 a.m., Holiday Inn, Crystal River. Rete Looney, x2133.

Society of Mfg'g. Engineers: Fri., Mar. 19, 8 p.m., Huntington Town House; Chapter 88; 25th annual dinner dance; $17.50 pp/$35 couple. William Hubschman, x2844.

Personal

We would like to thank all of our Grumman friends for their sympathy in the passing of our son Vincent. **Mr. and Mrs. Joseph Garraffa.**

We would like to express our deepest thanks to the people in Grumman who expressed their understanding and kindness at the time of our recent bereavement. **The Foley family.**

My gratitude and appreciation to all of the co-workers and personnel who expressed sympathy to myself and my children on the recent death of my husband Stephen. **Sue Kowal.**

Thanks to all those active Grummanites and retirees who sent get-well cards during my recent illness. It made me feel good to know I'm still part of the Grumman family. **Chris Witt Sr.**

GRUMMAN plane news

ADDRESS CORRECTION REQUESTED

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